REMARKS

Applicants have studied the Office Action mailed July 14, 2004 and have made amendments to the claims. It is submitted that the application, as amended, is in condition for allowance. By virtue of this amendment, claims 1-36 are pending. Reconsideration and allowance of the pending claims in view of the above amendments and the following remarks are respectfully requested. In the Office Action, the Examiner:

(2)   objected to abstract because it contains more than one paragraph, and for inclusion of FIG. 3 at the bottom of the abstract at line 31; and

(3)   objected to claims 2, 9, 11, 14, 21, 28, 32, and 36 for various informalities;

(4-5)   rejected claims 11 and 26 under 35 U.S.C. § 112, second paragraph, as being indefinite;

(6-7)   rejected claims 1-3, 6-8, 17-18, 20-22, 25-27, and 35 under 35 U.S.C. § 102(b) as being anticipated by Dornier (U.S. Patent No. 5,646,535);

(8)   rejected claims 1-8, 17-18, 20-27, 32, and 35 under 35 U.S.C. § 102(e) as being anticipated by Langford et al. (U.S. Patent No. 6,470,450);

(9-10)   rejected claims 9-10, 12, 14-15, 28-29, 31, and 33-34 under 35 U.S.C. § 103(a) as being unpatentable over Langford et al. (U.S. Patent No. 6,470,450) in view of Noll (6,185,696);

(11)   rejected claims 11 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Langford et al. (U.S. Patent No. 6,470,450) in view of Noll (6,185,696) and further in view of Jablon et al. (U.S. Patent No. 5,421,006);

(12)   rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Langford et al. (U.S. Patent No. 6,470,450) in view of Tanenbaum ("Structured Computer Organization");and

(13)   rejected claims 16, 19, and 36 under 35 U.S.C. § 103(a) as being unpatentable over Langford et al. (U.S. Patent No. 6,470,450) and further in view of Grimmer, Jr. et al. (U.S. Patent Number 5,737,760).

Overview of Current Invention

The present invention solves the problem of illicit access of data in a protected memory through exploitation of dump mode. The present invention permits the intended access of the data by a local processor with an electronic device, such as a microcontroller or microprocessor for execution and the testing of the data in memory to ensure its validity. Unlike prior art systems that make data

vulnerable to access during dump mode by using checksums only on small selectable portions of memory, the present invention requires a <u>predetermined quantity of data</u> before the data is exposed outside the device. Further, unlike prior art systems, the access intermediate validity data is controlled during device reset. The present invention includes <u>validation logic operative in a first mode, for checking the validity of the data and for producing a validity signal</u>, such as a checksum, enabling <u>to determine whether that data is valid</u>. In order to prevent access to intermediate validity calculations which may allow an individual to gain knowledge of the protected data, <u>validity signal output control logic</u> is provided <u>for inhibiting an output of the validity signal to outside the device until the validity of a predetermined quantity of the protected data has been checked</u>. This predetermined quantity is made sufficiently large and preferably equal to the all the protected data.

In order to more particularly point <u>validity signal output control</u> are provided <u>for inhibiting an output of the validity signal to outside the device until the validity of a predetermined quantity of the protected data has been checked</u>, the following language has been added to the independent claims, i.e., claims 1 and 20 as follows:

- claim 1

    memory <u>protection logic operable to interface with</u> memory for storing ~~said~~ protected data <u>therein, wherein access to said protected data is restricted for access by a local processor for execution thereon within said device</u>;

    validation logic, operative in a first mode, for checking the validity of said data and for producing a validity signal enabling to determine whether said data is valid; <u>and</u>

    validity signal output control logic for inhibiting an output of said validity signal to outside said device until the validity of a predetermined quantity of said protected data has been checked.

- claim 20

    <u>coupling memory protection logic to interface with memory for storing protected data therein, wherein access to said protected data is restricted for access by a local processor for execution thereon within said device;</u>

    checking, during a first mode, the validity of said data and ~~for~~ producing a validity signal indicative of whether said data is valid~~;~~;

    inhibiting an output of said validity signal to outside said device until the validity of a predetermined quantity of said protected data has been checked.

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Support for this amendment language is found in the specification of the present invention as originally filed at pages 2, lines 33-34, and pages 11 through page 20 along with FIGs 2-4. No new matter has been added.

(2) Objection to The Abstract

As noted above, the Examiner objected to the abstract. A substitute abstract has been submitted herewith to fully comply with 37 CFR §1.72. The Applicants respectfully submit that the Examiner's objection of Abstract should be respectfully withdrawn.

(3) Objection of Claim For Informalities

As noted above, the Examiner objected to claims 2, 9, 11, 14, 21, 28, 32, and 36 for various informalities. The Applicants wish to thank Examiner Dinh, and as suggested by the Examiner claims 2, 9, 11, 14, 28, 32, and 36 have been amended. Accordingly, the Applicants respectfully submit, that the Examiner's objection of claims 2, 9, 11, 14, 28, 32, and 36 should be respectfully withdrawn.

(4-5) Objection of Claim Under 35 U.S.C. § 112

As noted above, the Examiner rejected claims 11 and 26 under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 11 and 26 have been carefully amended for clarity and to distinctly claim the present invention. Accordingly, the Applicants respectfully submit, that the Examiner's rejection of claims 11 and 26 should be respectfully withdrawn.

(6-7) Rejection of Claims Under 35 U.S.C. § 102(b)

As noted above, the Examiner rejected claims 1-3, 6-8, 17-18, 20-22, 25-27, and 35 under 35 U.S.C. § 102(b) as being anticipated by Dornier (U.S. Patent No. 5,646,535). Independent claims 1 and 20 have been carefully amended to distinguish over Dornier. The Examiner at page 4 of the Office Action states *"Regarding claims (sic) 1, [....] Dornier discloses a device containing protected data,*

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comprising memory means for storing protected data." However, careful reading of Dornier discloses a method during POST (Power On Self Test) for ROM storing BIOS. See Dornier Abstract and col. 3, lines 45-57. BIOS by its very design must be accessible to the operating system and other programs during execution in a computer system to provide low-level interfaces to hardware devices.[1] Accordingly, by its very nature BIOS must be accessible to programs and the operating system and is not protected data "wherein access to said protected data is restricted for access by a local processor for execution thereon within said device." In contrast BIOS is accessible by the programs, operating system and the user in general. Thus even when ROM BIOS is provided with a password, the execution of the code and its services are usable by any program.

The Examiner cites 35 U.S.C. § 102(b) and a proper rejection requires that a single reference teach (i.e., identically describe) each and every element of the rejected claims as being anticipated by Dornier.[2] The elements in independent claims 1 and 20 of "wherein access to said protected data is restricted for access by a local processor for execution thereon within said device" are not taught or disclosed by Dornier. The apparatus and method of Dornier discloses BIOS that is not restricted for access only by the local processor. Accordingly, the present invention distinguishes over Dornier for at least this reason. The Applicants respectfully submit that the Examiner's rejection under 35 U.S.C. § 102(b) has been overcome.

Independent claims 1 and 20 have been amended to distinguish over Dornier. Claims 2-3, 6-8, 17-18, 21-22, 25-27, and 35 depend from claims 1 and 20 respectively, since dependent claims contain all the limitations of the independent claims, claims 2-3, 6-8, 17-18, 21-22, 25-27, and 35 distinguish over Dornier, as well.

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[1] See www.whatis.com - BIOS (basic input/output system) is the program a personal computer's microprocessor uses to get the computer system started after you turn it on. It also manages data flow between the computer's operating system and attached devices such as the hard disk, video adapter, keyboard, mouse, and printer.

[2] See MPEP §2131 (Emphasis Added) "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim."

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(8) Rejection of Claims Under 35 U.S.C. § 102(e)

As noted above, the Examiner rejected claims 1-8, 17-18, 20-27, 32, and 35 under 35 U.S.C. § 102(e) as being anticipated by Langford et al. (U.S. Patent No. 6,470,450). Independent claims 1 and 20 have been carefully amended to distinguish over Langford. The Examiner at page 5 of the Office Action states *"Regarding claim (sic) 1, [....] Langford discloses a device containing protected data, comprising memory means for storing protected data. "* However, careful reading of Langford discloses a method and system for limited access to data by computing hash values of the executable file and checking whether the hash value matches the corresponding stored hash value. The database has restricted access and is stored in the computer as taught by the computer. Further the data stored in ROM at col. 4, lines 4-7 is calling application data which is freely accessible since it is the software application that has to be checked and verified. Thus application data 24 is not access protected. Only the restricted access database is data which is protected data stored. The application data i.e. program which is the data submitted to the validity test (24) is not the same as the access data in the protected database. Langford is silent on a memory "wherein access to said protected data is restricted for access by a local processor for execution thereon within said device." Accordingly, independent claims 1 and 20 of the present invention distinguish over Langford for at least this reason.

Further, the device 26 as described by Langford provides software registering data 18 to the module 14. This software registering data by its very nature has to be valid and their validity is thus not tested in validity test 24 as taught by Langford. This is different than independent claims 1 and 20 of the present invention where "validation logic, operative in a first mode, for checking the validity of said data and for producing a validity signal enabling to determine whether said data is valid" where the data is protected data and "wherein access to said protected data is restricted for access by a local processor for execution thereon within said device." Thus, this data cannot be considered as protected either. This is not the same because the software registering data is not validated but rather it must be valid for Langford to correctly operate.

The Examiner cites 35 U.S.C. § 102(b) and a proper rejection requires that a single reference teach (i.e., identically describe) each and every element of the rejected claims as being anticipated by

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Langford.[3] The elements in independent claims 1 and 20 of "<u>validation logic, operative in a first mode, for checking the validity of said data and for producing a validity signal enabling to determine whether said data is valid</u>" where the data is protected data and "<u>wherein access to said protected data is restricted for access by a local processor for execution thereon within said device.</u>" is <u>not</u> taught or disclosed by Langford. The apparatus and method of Langford discloses an application data which is validated. This application is not access restricted for access only by the local processor. Accordingly, the present invention distinguishes over Dornier for at least this reason. The Applicants respectfully submit that the Examiner's rejection under 35 U.S.C. § 102(b) has been overcome.

Independent claims 1 and 20 have been amended to distinguish over Langford. Claims 2-8, 17-18, 21-27, 32, and 35 depend from claims 1 and 20 respectively, since dependent claims contain all the limitations of the independent claims, claims 2-8, 17-18, 21-27, 32, and 35 distinguish over Langford, as well.

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(9-10) Rejection under 35 U.S.C. §103(a) Langford in view of Noll

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As noted above, the Examiner rejected claims 9-10, 12, 14-15, 28-29, 31, and 33-34 under 35 U.S.C. § 103(a) as being unpatentable over Langford et al. (U.S. Patent No. 6,470,450) in further view of Noll (6,185,696). Independent claims 1 and 20 have been carefully amended to distinguish over Langford taken along and/or in view of Noll. The Examiner at page 5 of the Office Action correctly states that Langford is silent on a reset means and goes on to Langford with Noll.[4] The Statute expressly requires that obviousness or non-obviousness be determined for the claimed subject matter "as a whole," and the key to proper determination of the differences between the prior art and the present invention is giving full recognition to the invention "as a whole." The Langford reference taken alone and/or in view of Noll simply does <u>not</u> suggest, teach or disclose the patentably distinct limitation of "<u>validation logic, operative in a first mode, for checking the validity of said data and for producing a validity signal enabling to determine whether said data is valid</u>" where the data is protected data and "<u>wherein access to said protected data is restricted for access by a local processor</u>

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[3] See MPEP §2131 (Emphasis Added) "A claim is anticipated only if <u>each and every element</u> as set forth in the claim is found, either expressly or inherently described, in a <u>single</u> prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim."

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for execution thereon within said device." Accordingly, the Applicants respectfully submit that the independent claims 1 and 20 of the present invention distinguish over Langford taken alone and/or in view of Noll for at least this reason.

Further, Applicants submit that the combination of Langford with Noll teaches away from "validation logic, operative in a first mode, for checking the validity of said data and for producing a validity signal enabling to determine whether said data is valid" where the data is protected data and "wherein access to said protected data is restricted for access by a local processor for execution thereon within said device." As previously discussed above, Langford is expressly teaching that the applications data 24 is accessible for testing. This is not the same as "wherein access to said protected data is restricted for access by a local processor for execution thereon within said device." Further, it is this application data 24 which is validated as taught by Langford. This is not the same as "checking the validity of said" protected "data and for producing a validity signal enabling to determine whether said data is valid." Noll is silent on this as well. Langford taken alone and/or in view of Noll specifically teaches away by using protected data which is validated. Where the prior art points away from the combination, modification or substitution of which is the premises of the PTO's alleged prima facie case of obviousness, there likewise is a built-in traversal of the rejection. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).[5] Accordingly, the Applicants respectfully submit that the independent claims 1 and 20 of the present invention distinguishes over Langford taken alone and/or in view of Noll for at least this reason as well.

For the foregoing reasons, independent claims 1 and 20 as amended distinguish over Langford taken alone or in view of Noll. Claims 9-10, 12, 14-15, 28-29, 31, and 33-35 depend from claims 1 and 20; since dependent claims contain all the limitations of the independent claims, claims 9-10, 12, 14-15, 28-29, 31, and 33-35 distinguish over Langford taken alone and/or in view of Noll, as well, and the Examiner's rejection should be withdrawn.

(11)Rejection under 35 U.S.C. §103(a) Langford in view of Tanenbaum

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[4] Applicants make no statement whether such combination is even proper.
[5] The Federal Circuit held a reference did not render the claimed combination *prima facie* obvious because *inter alia*, the Examiner ignored material, claimed temperature limitations which were absent from the reference. See MPEP §2143.01

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As noted above, the Examiner rejected claims 11 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Langford et al. (U.S. Patent No. 6,470,450) in view of Noll (6,185,696) and further in view of Jablon et al. (U.S. Patent No. 5,421,006). Independent claims 1 and 20 have been carefully amended to distinguish over Langford taken along and/or in view of Noll and/or in view of Jablon. The Examiner at page 8 of the Office Action correctly states that Langford and Noll are silent on a reset means comprising a latching means and goes on to Langford with Noll and Jablon.[6] Jablon is silent on "validation logic, operative in a first mode, for checking the validity of said data and for producing a validity signal enabling to determine whether said data is valid" where the data is protected data and "wherein access to said protected data is restricted for access by a local processor for execution thereon within said device." Accordingly, the Applicants respectfully submit that the independent claims 1 and 20 of the present invention distinguish over Langford taken alone and/or in view of Noll and/or Jablon for at least this reason.

For the foregoing reasons, independent claims 1 and 20 as amended distinguish over Langford taken alone or in view of Noll. Claims 11 and 30 depend from claims 1 and 20; since dependent claims contain all the limitations of the independent claims, claims 11 and 30 distinguish over Langford taken alone and/or in view of Noll and/or further in view of Langford, as well, and the Examiner's rejection should be withdrawn.

(12)Rejection under 35 U.S.C. §103(a) Langford in view of Tanenbaum

As noted above, the Examiner rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Langford et al. (U.S. Patent No. 6,470,450) in further view of Tanenbaum. Independent claim 1 has been carefully amended to distinguish over Langford taken along and/or in view of Tanenbaum. The Examiner at page 9 of the Office Action correctly states that Langford is silent on validity signal output control means is implement in hardware and goes on to Langford with Tanenbaum.[7] Tanenbaum is silent on "validation logic, operative in a first mode, for checking the validity of said data and for producing a validity signal enabling to determine whether said data is valid" where the data is protected data and "wherein access to said protected data is restricted for access by a local processor for execution thereon within said device." Accordingly, the Applicants respectfully

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[6] Applicants make no statement whether such combination is even proper.
[7] Applicants make no statement whether such combination is even proper.

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submit that the independent claim 1 of the present invention distinguishes over Langford taken alone and/or in view of Tanenbaum for at least this reason.

For the foregoing reasons, independent claim 1 as amended distinguishes over Langford taken alone or in view of Tanenbaum. Claim 13 depends from claim 1, since dependent claims contain all the limitations of the independent claims, claims 13 distinguishes over Langford taken alone and/or in view of Tanenbaum, as well, and the Examiner's rejection should be withdrawn.

(13)Rejection under 35 U.S.C. §103(a) Langford in view of Grimmer

As noted above, the Examiner rejected claims 16, 19, and 36 under 35 U.S.C. § 103(a) as being unpatentable over Langford et al. (U.S. Patent No. 6,470,450) in further view of Grimmer, Jr. et al. Independent claims 1 and 20 have been carefully amended to distinguish over Langford taken along and/or in view of Grimmer. The Examiner at page 9 of the Office Action correctly states that Langford is silent on the device is implemented in a microcontroller unit and goes on to Langford with Grimmer.[8] Grimmer is silent on "validation logic, operative in a first mode, for checking the validity of said data and for producing a validity signal enabling to determine whether said data is valid" where the data is protected data and "wherein access to said protected data is restricted for access by a local processor for execution thereon within said device." Accordingly, the Applicants respectfully submit that the independent claim 1 of the present invention distinguishes over Langford taken alone and/or in view of Grimmer for at least this reason.

For the foregoing reasons, independent claims 1 and 20 as amended distinguish over Langford taken alone or in view of Grimmer. Claim 16, 19, and 36 depend from independent claims 1 and 20; since dependent claims contain all the limitations of the independent claims, claims 16, 19, and 36 distinguish over Langford taken alone and/or in view of Grimmer, as well, and the Examiner's rejection should be withdrawn.

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[8] Applicants make no statement whether such combination is even proper.

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CONCLUSION

The remaining cited references have been reviewed and are not believed to affect the patentability of the claims as amended.

In this Response, Applicants have amended certain claims. In light of the Office Action, Applicants believe these amendments serve a useful clarification purpose, and are desirable for clarification purposes, independent of patentability. Accordingly, Applicants respectfully submit that the claim amendments do not limit the range of any permissible equivalents.

Applicants acknowledge the continuing duty of candor and good faith to disclosure of information known to be material to the examination of this application. In accordance with 37 CFR §1.56, all such information is dutifully made of record. The foreseeable equivalents of any territory surrendered by amendment are limited to the territory taught by the information of record. No other territory afforded by the doctrine of equivalents is knowingly surrendered and everything else is unforeseeable at the time of this amendment by the Applicants and their attorneys.

Applicants respectfully submit that all of the grounds for rejection stated in the Examiner's Office Action have been overcome, and that all claims in the application are allowable. No new matter has been added. It is believed that the application is now in condition for allowance, which allowance is respectfully requested.

PLEASE CALL the undersigned if that would expedite the prosecution of this application.

Respectfully submitted,

Date: November **15**, 2004

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